UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,293	09/16/2003	Michel Doyon	10442-30US	9796

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OGILVY RENAULT LLP
1981 MCGILL COLLEGE AVENUE
SUITE 1600
MONTREAL, QC H3A2Y3
CANADA

EXAMINER
ZHEN, LI B

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/662,293	DOYON ET AL.
	Examiner	Art Unit	
	Li B. Zhen	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 May 2008</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-14</u> is/are pending in the application.
     4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-14</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 14 are pending in the application.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/1/2008 has been entered.

Response to Arguments

3.   Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   **Claims 1 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable**

over U.S. Patent No. 5,903,752 to Dingwall et al. (hereinafter Dingwall, previously

cited) in view of U.S. Patent No. 6,971,101 to Clayton et al. (hereinafter Clayton).

6.   As to claim 1, Dingwall teaches a computer system, a method for providing

improved real time command execution in a non real time operating system, comprising:

executing at least one application at a user mode level of said computer system

(WINDOWS™ Applications, 22, Fig. 2);

providing from said at least one application said sequence of asynchronous

commands (software interrupts generated by WINDOWS™Applications wishing to

communicate with Application-specific Tasks, col. 4, lines 14-16, made up of events) to

be executed in real time (Virtual Device Driver (VxD), 28, Fig. 2, supports real-time

multi-tasking, col. 3, lines 46-47);

storing said sequence of asynchronous commands in a command queue (real

time tasks, 34, Fig. 2 and RT Event 36, Fig. 2) to be accessible from a privileged mode

level of said computing system (Virtual Device Driver (VxD), 28, Fig. 2, run at most

privileged level col. 3, lines 36-37); and

implementing one at a time each of said stored asynchronous commands (task

executes until complete in interrupt mode, col. 5, lines 7-9). Dingwall does not

specifically disclose at least one application at said user mode level determine a

sequence to be followed for a set of asynchronous commands.

However, Clayton teaches an application at said user mode level (asynchronous request 209 is received by focus manager 206 and assigned a 0 time priority level 252; col. 7, line 56 – col. 8, line 6) determine a sequence to be followed for a set of asynchronous commands (focus manager 206 includes a queue 250….Queue 250 comprises any number of priority levels; col. 5, lines 1 – 20).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Dingwall to incorporate the features of Clayton. One of ordinary skill in the art would have been motivated to make the combination because this allows an asynchronous entity to take over control of user interface device resources from an entity, utilizes the resources, and returns them to the entity (see abstract of Clayton).

7.   As to claim 2, Dingwall teaches the method as claimed in claim 1, wherein a plurality of sequences of asynchronous commands is provided (software interrupts generated by WINDOWS™Applications wishing to communicate with Application-specific Tasks, col. 4, lines 14-16, made up of events), each sequence being related to a corresponding application thread (task), further wherein said storing of a sequence of asynchronous commands is performed in a corresponding queue (real time tasks, 34, Fig. 2 and RT Event 36, Fig. 2) from the execution of said corresponding application thread queue (RT Task execution mode, Fig. 9).

8.   As to claim 3, Dingwall teaches the method as claimed in claim 1, wherein a

synchronous (real-time) command is added to said sequence of asynchronous

commands, said application sleeping (application task is asleep (dormant/locked) until

interrupted, 818, Fig. 8) until said synchronous command is executed (RT Scheduler 30,

Fig. 2, releases scheduling lock which allows real-time tasks to pre-empt the current

(asynchronous) process, col. 3, lines 59-61).

9.   As to claim 4, Dingwall teaches the method as claimed in claim 2, wherein a

synchronous command is added to said sequence of asynchronous commands, said

application thread sleeping (application task is asleep (dormant/locked) until interrupted,

818, Fig. 8) until said synchronous command is executed (RT Scheduler 30, Fig. 2,

releases scheduling lock which allows real-time tasks to pre-empt the current

(asynchronous) process, col. 3, lines 59-61).

10.   As to claim 5, Dingwall teaches the method as claimed in claim 1, wherein said

non real time operating system is MICROSOFT WINDOWS™ (environment of

WINDOWS™, col. 3, lines 33-34) and said step of storing is performed through

execution of a driver routine from a DLL file (Virtual Device Driver (VxD) is dynamic link

library (DLL), col. 3, lines 33-36).

11.   As to claim 6, Dingwall teaches the method as claimed in claim 5, wherein said

step of providing involves said commands being pushed one at a time into said

sequence through system call (interrupt occurs which causes the processor to switch to

VxD interrupt mode and execute RT interrupt handler 32, Fig. 2, col. 4, lines 51-23, RT

interrupt handler 32, Fig. 2, wake up associated real-time task).

12.   As to claim 7, Dingwall teaches the method as claimed in claim 1, wherein one of

said stored commands is a branch command to control the order of execution of said

stored commands (RT scheduler 30, Fig. 2, schedules task preemptively by priority and

allows interrupt handlers 32, Fig. 2, to make real-time tasks ready for execution without

preemption, col. 3, lines 54-62).

13.   As to claim 8, Dingwall teaches the method as claimed in claim 1, wherein said

step of implementing is done at a different privileged mode level system (Virtual Device

Driver (VxD), 28, Fig. 2, run at most privileged level col. 3, lines 36-37).

14.   As to claim 9, Dingwall teaches the method as claimed in claim 8, wherein said

different privileged level is that of the Interrupt Service Routine (Virtual Device Driver

(VxD), 28, Fig. 2, which is interrupt driven, runs at most privileged level col. 3, lines 36-

38), whereby the delay between the execution of successive commands is minimized

(improves real-time response col. 2, line 49-50).

15.   As to claim 10, Dingwall teaches the method as claimed in claim 9, wherein said

non real-time operating system is MICROSOFT WINDOWS™ (environment of

WINDOWS™, col. 3, lines 33-34).

16.   As to claim 11, Dingwall teaches the method as claimed in claim 1, wherein said

sequence of commands process the same data set (task needs to process data in

buffer stored by audio/video device, col. 4, lines 59-60).

17.   As to claim 12, Dingwall teaches the method as claimed in claim 11, wherein said

same data set is a video camera image being captured and processed in real-time (task

needs to process data in buffer stored by audio/video device, col. 4, lines 59-

60)(example task used to perform capture or playback of audio/video, col. 4, lines 5-6).

18.   As to claim 13, Dingwall teaches the method as claimed in claim 1, wherein said

step of providing involves said commands being pushed one at a time into said

sequence through a system call (interrupt occurs which causes the processor to switch

to VxD interrupt mode and execute RT interrupt handler 32, Fig. 2, col. 4, lines 51-23,

RT interrupt handler 32, Fig. 2, wake up associated real-time task).

19.   As to claim 14, Dingwall teaches the method as claimed in claim 1, wherein said

step of storing is performed through execution of a driver routine (Virtual Device Driver)

from a system file (Virtual Device Driver (VxD) is dynamic link library (DLL), col. 3, lines
33-36).

CONTACT INFORMATION

20.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768.

The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571)272-3756. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Li B. Zhen
Primary Examiner
Art Unit 2194

/Li B. Zhen/
Primary Examiner, Art Unit 2194